

NOTES: (UNLESS OTHERWISE SPECIFIED)

- THIS IS A CRYOGENIC VACUUM COMPONENT.
- WELDING PROCEDURE: PER VENDOR SPECIFICATION WITH LBNL APPROVAL.
- CLEANING PROCEDURE : PER VENDOR SPECIFICATION WITH LBNL APPROVAL.
- PACKAGING AND STORAGE PROCEDURE OF THE COMPONENTS: PER VENDOR SPECIFICATION WITH LBNL APPROVAL.
- DIMENSIONS AND TOLERANCING PER ANSI Y14.5M-1982. UNITS ARE IN INCHES [mm] UNLESS OTHERWISE SPECIFIED.
- USE OF SULFUR OR SILICONE BEARING OILS, LUBRICANTS, OR COOLANTS ARE STRICTLY PROHIBITED.
- USE OF RESIN OR RUBBER BONDED ABRASIVES UNDER POWER IS STRICTLY PROHIBITED. USE VITREOUS BONDED ABRASIVES ONLY.
- VENDOR SUGGESTED CHANGES TO WELD PREPS; SUBJECT TO LBNL APPROVAL.
- FITTINGS MAY BE USED IN PLACE OF BENDS; SUBJECT TO LBNL APPROVAL.
- VENDOR SUGGESTED CHANGES TO TOLERANCES TO FACILITATE FABRICATION OR ASSEMBLY; SUBJECT TO LBNL APPROVAL.
- REMOVE ALL THE BURRS AND REAM THE ENDS FOR CIRCULARITY AND CLEAN ENDS.
- TUBE END SURFACE MUST BE PERPENDICULAR TO THE TUBE AXIS WITHIN ± 0.010 .
- PERFORM ACCEPTANCE TESTS PER LBNL SPECIFICATION M989.
- A MARK DESIGNATING THE INSTALLED LENGTH WILL BE UTILIZED DURING FINAL INSTALLATION OF THE FEEDBOX ASSEMBLY. MARK, SCRIBE OR ETCH THIS LOCATION IN A PERMANENT MANNER, SUBJECT TO LBNL APPROVAL, TO AN ACCURACY OF ± 0.063 ".
- PROVIDE A MINIMUM LENGTH OF 4.0" OF STRAIGHT, SMOOTH PIPE ON THE INDICATED SIDE OF THE INSTALLED LENGTH MARK FOR PIPE WELDING DURING FINAL INSTALLATION OF THE FEEDBOX ASSEMBLY.
- PIPE MUST BE STRAIGHT AND SMOOTH (NO BUMPS) FOR 1.5" ON EITHER SIDE OF THE CENTER-PLANE OF THE SUPPORT.
- CAP BOTH ENDS OF PIPE TO FACILITATE ACCEPTANCE TESTS.
- INSTALL TEMPERATURE SENSOR IN ACCORDANCE WITH LHC SPECIFICATION LHC-QIT-AP-0002. SENSOR TO BE PROVIDED BY LBNL.
- VENDOR WILL PROTECT BELLWS FROM DAMAGE DURING TESTING AND SHIPPING. USING VENDORS PREFERRED METHOD, SUBJECT TO LBNL APPROVAL.

REV	DATE	BY	CHK	ZONE	DATE	DESCRIPTION
A	01/10/03	ARH	SPV			RE-CONFIGURED THRUST SUPPORTS, CHANGED BELLWS; ADDED TEMP. BELLWS RESTRAINT. ADDED DIMS TO TOP VIEW (SHT 2). MOVED END VIEW TO NEW PAGE 3. REVISED DWG NOTES 13, 16 & 17. MINOR DRAWING DIMENSIONAL CHANGES
B	01/10/03	ARH	SPV			RE-CONFIGURED THRUST SUPPORTS, CHANGED BELLWS; ADDED TEMP. BELLWS RESTRAINT. ADDED DIMS TO TOP VIEW (SHT 2). MOVED END VIEW TO NEW PAGE 3. REVISED DWG NOTES 13, 16 & 17. MINOR DRAWING DIMENSIONAL CHANGES
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ITEM	PART NO.	QTY	DESCRIPTION	MATERIAL
33	-	1	TUBE, PER ASTM A269	SS 304L
32	-	1	1/4" PLATE	SS 304L
31	-	1	2ND PASSIVE HEATER	SS 304L
30	251913	2	SUPPORT BRACKET, SURGE TANK	SS 304L
29	251840	1	HEATER TUBE	SS 304L
28	251551	1	TRANS-DUCER TUBING	SS 304L
27	251549	1	PIPE, XB, SURGE TANK ATTACHMENT	SS 304L
26	251547	1	SURGE TANK BODY	SS 304L
25	251358	1	SURGE TANK BOTTOM	SS 304L
24	251357	1	SURGE TANK TOP	SS 304L
23	251220	1	PIPE, XB, SURGE TANK ATTACHMENT	SS 304L
22	25M821	1	XB BELLWS SUPPORT BRACKET	SS 304L
21	25M928	1	XB VERTICAL SUPPORT BRACKET	SS 304L
20	25M862	1	WELD BRACKET	SS 304L
19	-	1	BELLWS, FINAL: 5520-MB-390499	SS 300 SERIES
18	25M877	1	CLAMP BASE PLATE, 5/8 TUBE X 5.00 "	OFHC C101
17	251426	1	CLAMP BASE PLATE	OFHC C101
16	25M979	1	1/2" FLAT WASHER	CD4 101
15	25M977	1	THERMOMETER PAD 3/8"	CD4 101
14	25M978	2	SUPPORT PLATE	CD4 101
13	25M926	1	XB HANGER, ANGLE PLATE	304 SS
12	-	1	1/2" FLAT WASHER	18-8 SS
11	-	1	1/2" HEX NUT	18-8 SS
10	-	12	1/4-20 HEX NUT	18-8 SS
9	-	4	1/4-20 THREADED ROD	18-8 SS
8	-	1	HEX HD BOLT, 1/2-13 X 1-1/4 LG	18-8 SS
7	251548	1	PIPE, C11	-
6	25M863	1	XB BELLWS SUPPORT BRACKET	-
5	25M810	1	THRUST SUPPORT, ADJUSTABLE	-
4	25M810	1	THRUST SUPPORT, ADJUSTABLE	-
3	25M413	3	THRUST SUPPORT, ADJUSTABLE	-
2	25M814	1	CLAMP COVER 4"	OFHC, C101
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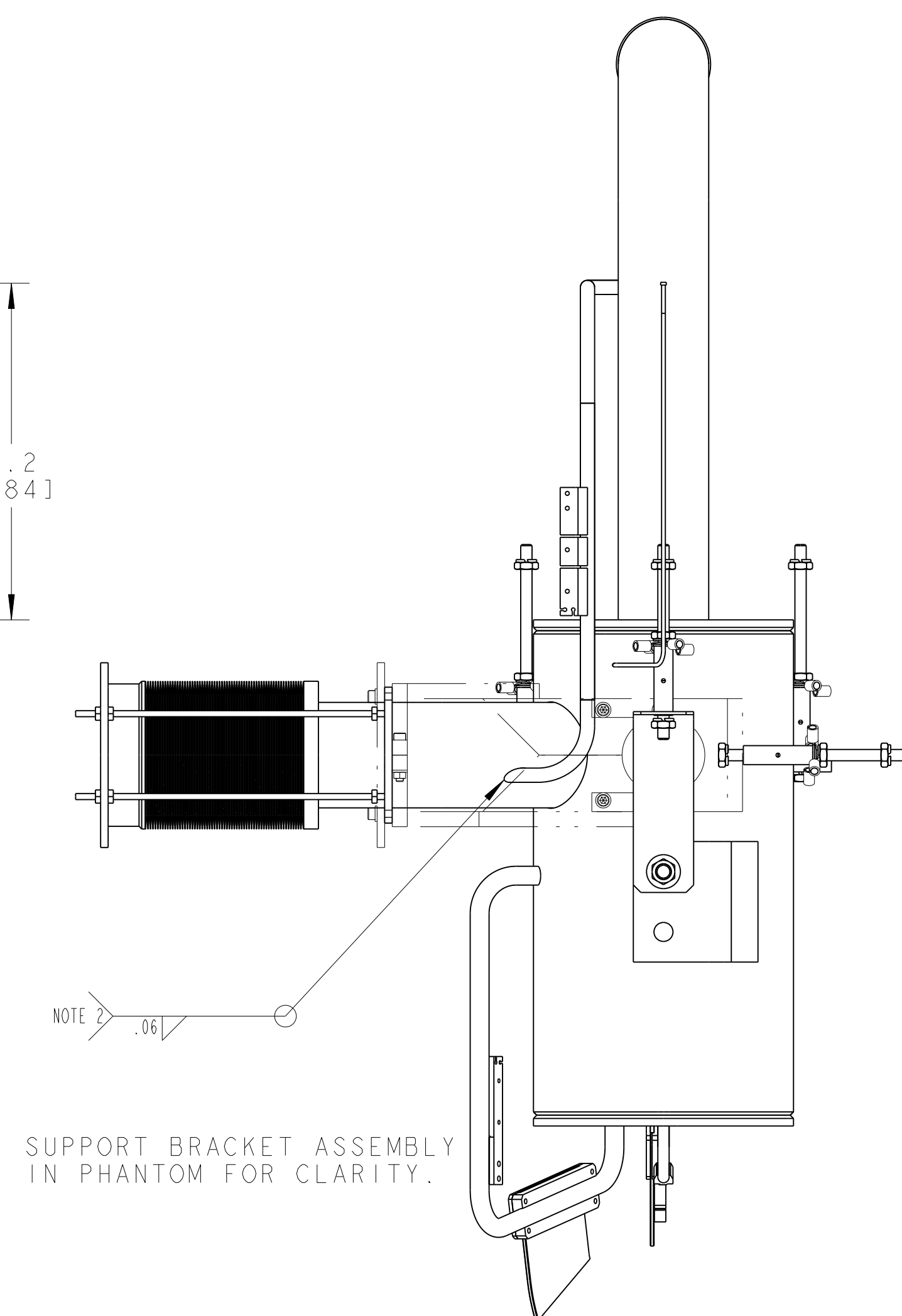
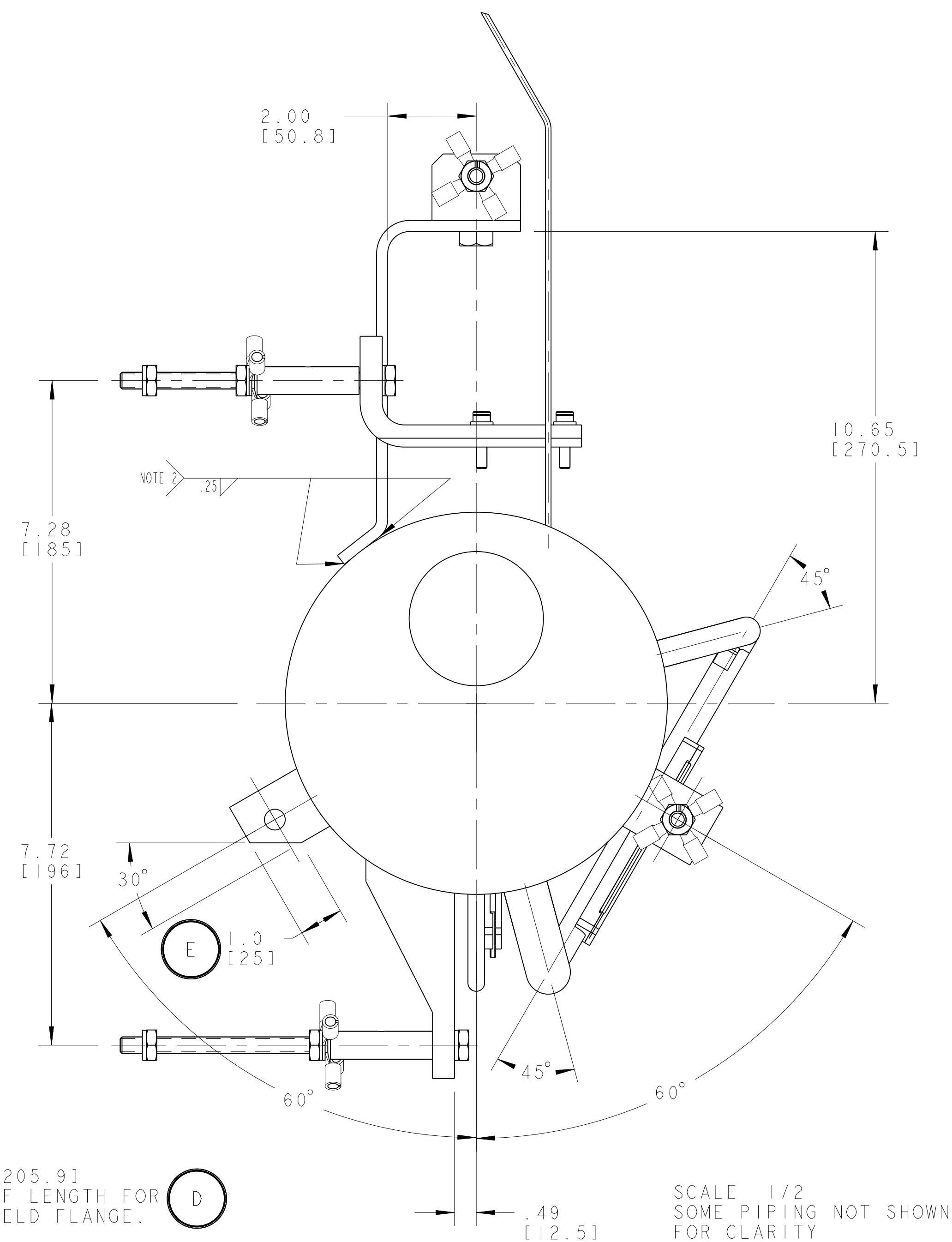
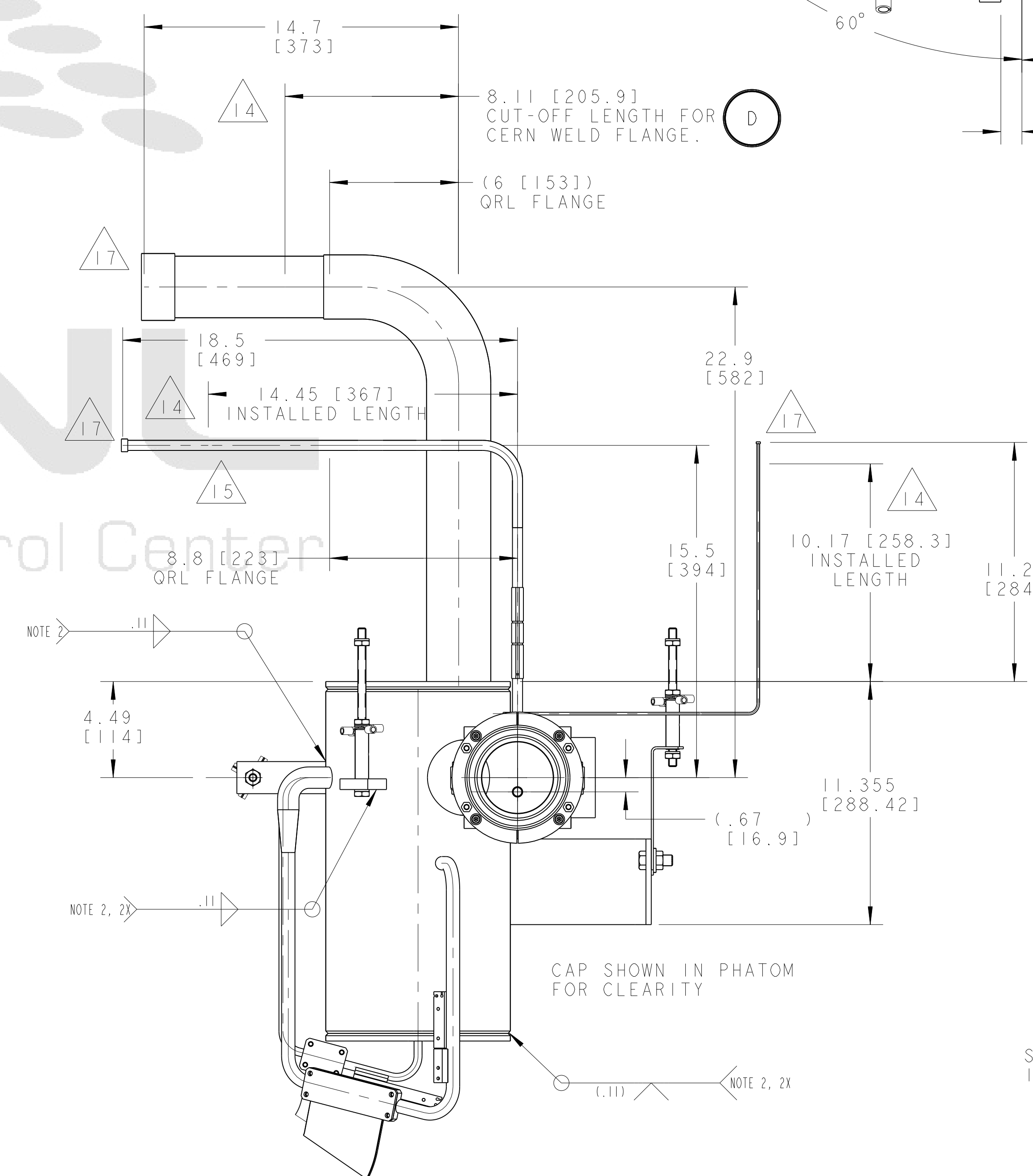
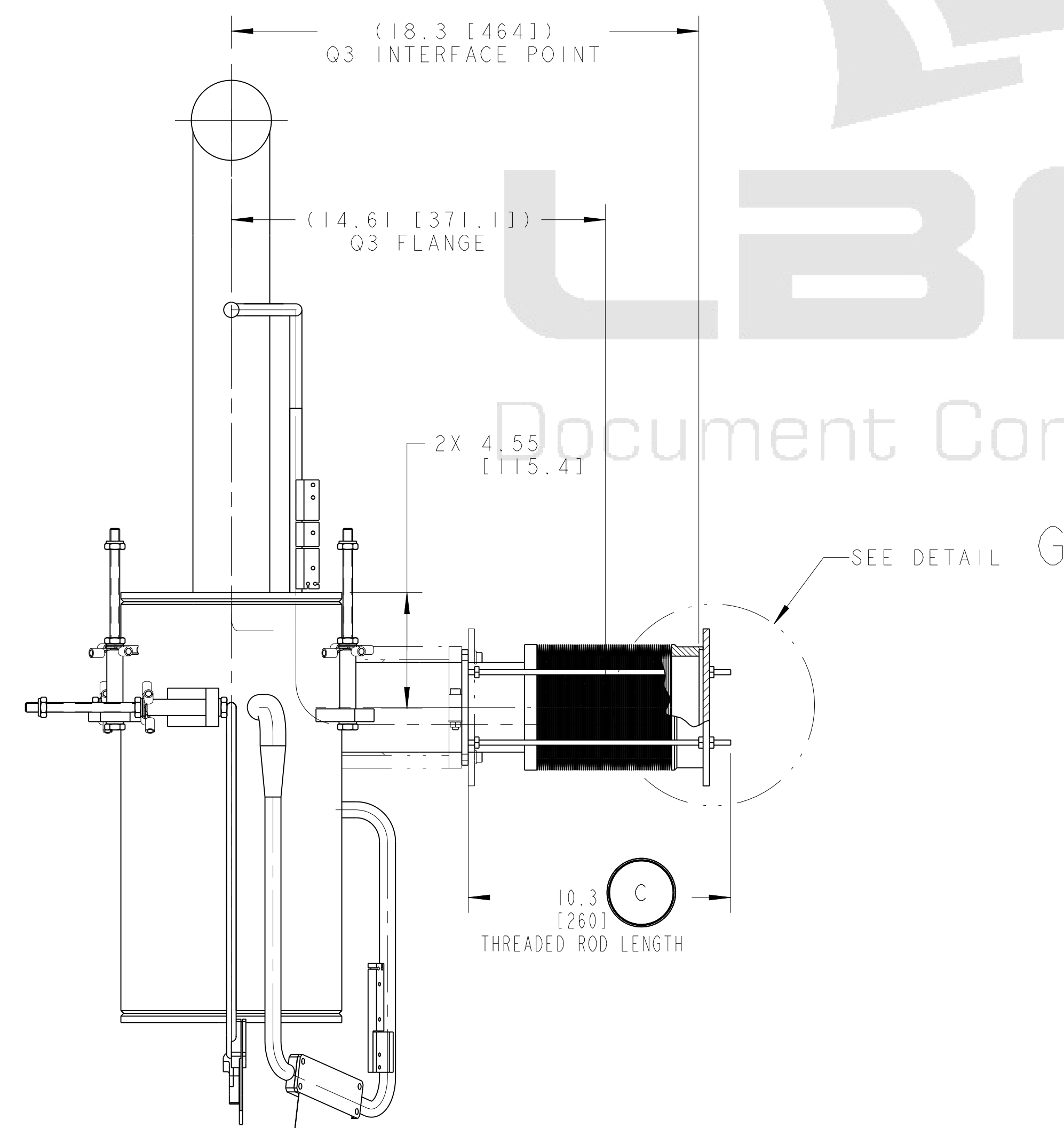
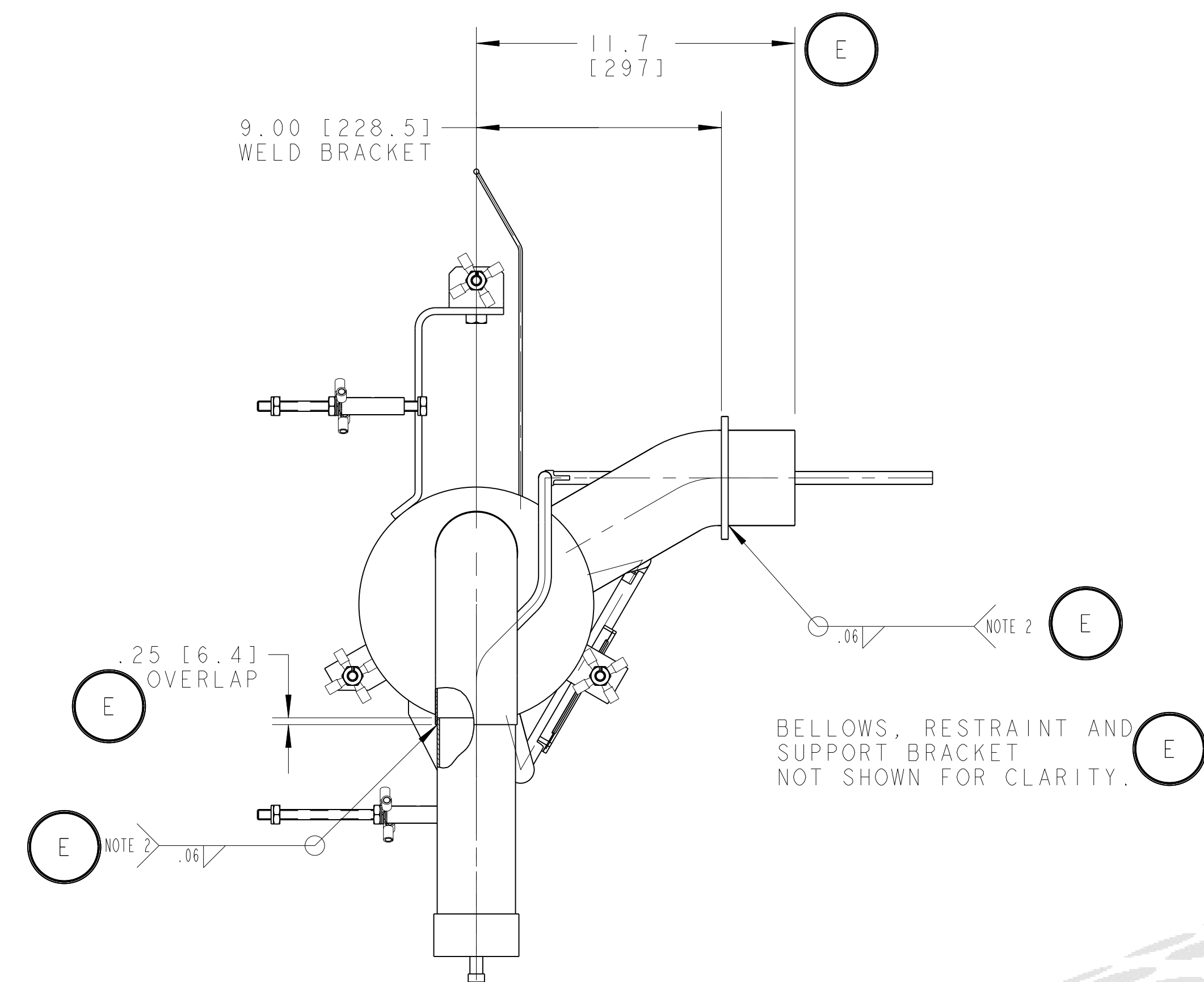
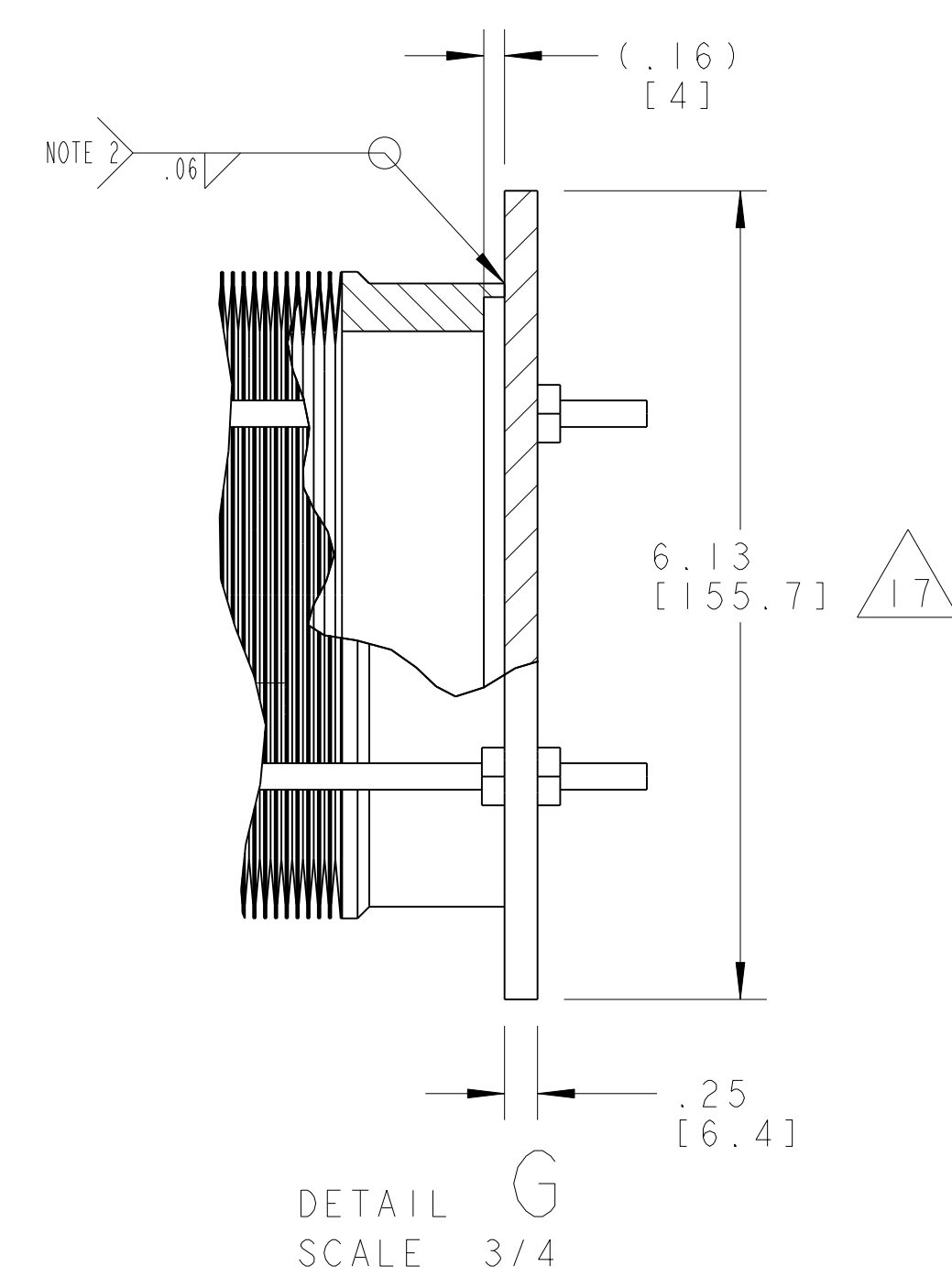
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UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		DRAWING NO. 251551		ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY			
TOLERANCES		FINISH		SURFACE		UNIVERSITY OF CALIFORNIA		BERKELEY	
X.Y ± 0.1		FRAC. ± 1/64		NO. RECD					
X.YX ± 0.03		Angles ± 1.00°							
X.XXX ± 0.010		FINISH 125 μm							
DO NOT SCALE PRINT									
THREADS ARE CLASS 2									
COUNTER ENDS OF ALL SCREW THREADS "30"									
CHAMFER 1/8" 1.3 THREAD RELIEF ON MACHINED THREADS									
SCREW ENDS 1/8" ON MACHINED HOLE									
HOLE ENDS, REAM, ALSO SPATTERED TO EDGE SCALE									
IN ACCORDANCE WITH ASME 10.10.3.1									



ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY					
UNIVERSITY OF CALIFORNIA - BERKELEY					
LHC IR FEEDBOX CRYOGENICS					
PIPE, XB DFBXF					
MICROFILMED:	DWG. TYPE	SHOWN ON	SCALE	1/4	DO NOT SCALE PRINTS
	ASSEM				
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE	DWG. NO.	2515456	REV. E
	ZSLCE2	LH2003			

